ALTO-SHAAM®

Combitherm®
Combination Oven/Steamer

ecosmart®

shown with ExpressTouch control

CT Express™

4.10ESi CombiOven

STEP BY STEP COOKING GUIDE AND OPERATION MANUAL

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INTRODUCTION

ECOSMART® TECHNOLOGY

The Alto-Shaam CT Express Combitherm combination oven/steamer employs Ecosmart operating efficiencies in the design and application of all operating and programming functions. Ecosmart operational characteristics include the use of a water barrier to close the oven compartment to the outside air. While maintaining a non-pressurized atmosphere, the primary purpose of the Ecosmart system is to prevent the steam and heat generated within the oven compartment from freely escaping to the outside.

The Ecosmart design displaces the air within the cooking compartment and achieves a higher level of steam saturation that offers quick-steaming at temperatures above 212°F (100°C).

This guide is provided as an operational aid with step-by-step instructions of the basic functions of the Combitherm oven, along with the many other additional features of the control.

EXPRESSTOUCH™ CONTROL

The Combitherm ExpressTouch control features a simple, graphics-based control panel that commands all the oven functions. Access up to 250 of your titled recipes. Manual cooking by time and temperature also are easily accomplished.

Intuitive interface - The Alto-Shaam ExpressTouch offers a simple interface that commands all of the Combitherm's cooking functions. As the name implies, it is fully operable by touch.

Graphic controls - The highly visual graphic-based control with logical procedures ensure that correct steps are followed every time.

An excellent memory - Access up to 250 of your titled recipes. The CT Express with ExpressTouch also comes standard with more than 100 pre-programmed recipes covering most commonly prepared food items.

HACCP data access (option) - The CT Express with ExpressTouch offers a downloadable HACCP function.

STEAM MODE

COMBINATION MODE

CONVECTION MODE

RETHERM MODE

Six levels of Gold-n-Brown™ - Six precise and consistent browning levels are standard with the ExpressTouch. The exclusive Gold-n-Brown feature gives the operator the ability to achieve the ideal cooking environment for the ideal finish.

Superior baking - The two-speed fan provides consistent baking results. A moisture injection feature provides perfect sheen and crust on breads and pastry items.

Multi-shelf timers - Track cooking time of different food items in the same oven with multi-shelf timers. Time is tracked in minutes and seconds.

On-board diagnostics - The ExpressTouch system includes on-board diagnostic functionality with results displayed right on the touch screen.

Reduced energy setting - ExpressTouch features an interactive control display with reduced energy setting.

Powerful tool - The ExpressTouch control plays an important part in our continuous improvement process. New features and abilities can be uploaded to your oven as they become available. Simply call our Service Department for assistance.

INTRODUCTION

SIMPLE CONTROL

The Combitherm Simple control features a simple, push button control that commands all the oven functions. Whether you cook by time, or cook using the optional product probe, rest assured you will be able to bake, roast, steam, poach, grill, broil, proof, braise and oven fry with confidence.

LED display - Easy to read display indicates temperature settings, time remaining, and various instructions.

STEAM MODE

COMBINATION MODE

CONVECTION MODE

INTRODUCTION

IMPORTANT SAFETY PRECAUTIONS

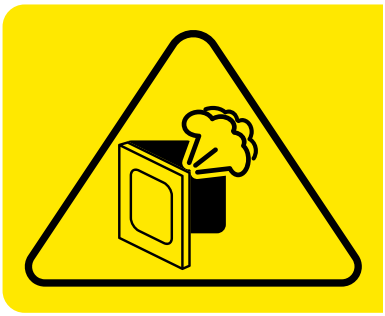
NOTE: **Automatic steam venting is a standard safety feature built into all Combitherm oven models. This feature vents all steam from the oven compartment immediately before cooking time expires or set probe temperature is reached.**

This function is provided in all programmed and timed production when operating in any Steam, Combination, Convection, and Retherm cooking mode. Automatic steam venting does not function if the oven door is opened before time expires or when the oven has been set to continuous operation.

NOTE: **Use authorized combitherm oven cleaner only. unauthorized cleaning agents may discolor or harm interior surfaces of the oven. Read and understand label and material safety data sheet before using the oven cleaner.**

FOR OPERATOR SAFETY

NOTE AND OBSERVE ALL SAFETY PRECAUTIONS LOCATED THROUGHOUT THIS GUIDE



DANGER

AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.

SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.

WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

WARNING

HOT STEAM CAUSES BURNS

ROTATE THE DOOR HANDLE TO THE FIRST OPEN ROTATION POSITION ONLY. WAIT UNTIL THE STEAM IS VENTED BEFORE FULLY OPENING THE DOOR.

CAUTION

METAL PARTS OF THIS EQUIPMENT BECOME EXTREMELY HOT WHEN IN OPERATION. TO AVOID BURNS, ALWAYS USE HAND PROTECTION WHEN OPERATING THIS APPLIANCE.

CAUTION

DO NOT **USE THE ATTACHED HAND-HELD HOSE TO SPRAY ANYTHING OTHER THAN THE INTERIOR OF THE COMBITHERM OVEN COMPARTMENT.**

DO NOT **USE THE SPRAY HOSE ON THE SURFACE OF A HOT COOKING COMPARTMENT. ALLOW THE OVEN TO COOL TO A MINIMUM OF 150°F (66°C).**

WARNING

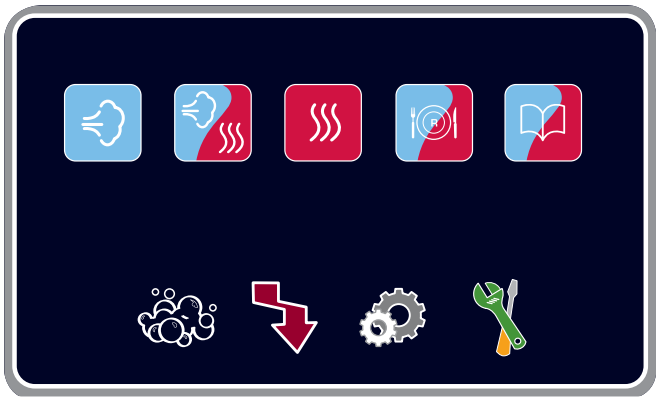
DO NOT **HANDLE PANS CONTAINING LIQUID OR SEMILIQUID PRODUCTS POSITIONED ABOVE THE EYE LEVEL OF THE OPERATOR. SUCH PRODUCTS CAN SCALD AND CAUSE SERIOUS INJURY.**

EXPRESSTOUCH OPERATING INSTRUCTIONS

START-UP PROCEDURES

When the oven is powered on, the ExpressTouch screen illuminates. "Loading" indicates that the software is booting up. The screen will also indicate what level of progress has been made as the software becomes fully operational.

MAIN MENU SCREEN



Cleaning Mode (optional)
Four (4) cleaning levels are available: rinse, light, normal, and heavy-duty cleaning.

Download/Upload Files and HACCP Access (optional)
Download all preprogrammed recipes (factory default and user-programmed) and HACCP data to a USB memory stick.

Settings
Change factory default settings. *See next page for more information.*

Service Mode (password protected)
This mode is only available to qualified service technicians.

SETTINGS SCREEN

Fahrenheit or Celsius Function - Choose temperature format.
Note: **After choosing your format, return to the Main Menu screen and then Press Oven Power switch off.**

Multi-shelf Timer Number of Shelves - Choose the default number of items in the oven to be used by the multi-shelf timer.

Default Memo - Top icon reverts time/temperature setting to factory defaults when switching modes. Bottom icon allows you to keep the last user setting.

Sound/Alarm Settings - Change alarm sounds and volume.

Touchscreen Brightness - Adjust brightness of display screen.

Lock/Unlock Recipes - Password protect preprogrammed recipes.

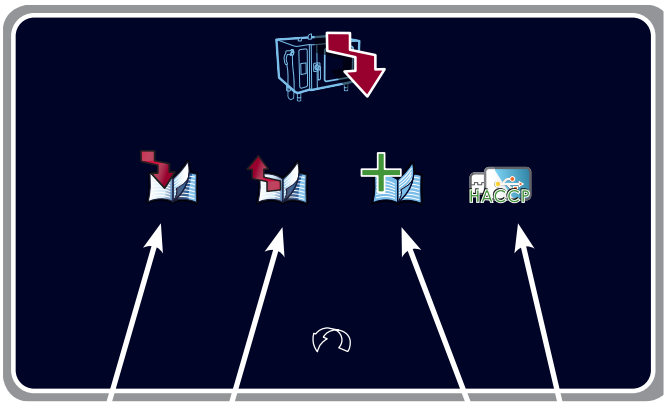
Set/Change Date & Time - Set or change oven time and date settings.

Calibrate Product Probe (optional)

Software update - Upload new control software to the oven using a USB drive.

Return to Previous Screen - Return to previous screen when finished adjusting settings.

UPLOAD/DOWNLOAD SCREEN



DOWNLOAD RECIPES

ADD ALL RECIPES

GO TO PREVIOUS SCREEN

UPLOAD RECIPES

DOWNLOAD HACCP INFO

Download Recipes
Copy ***all*** recipes from USB memory stick to oven. This will replace and overwrite existing recipes.

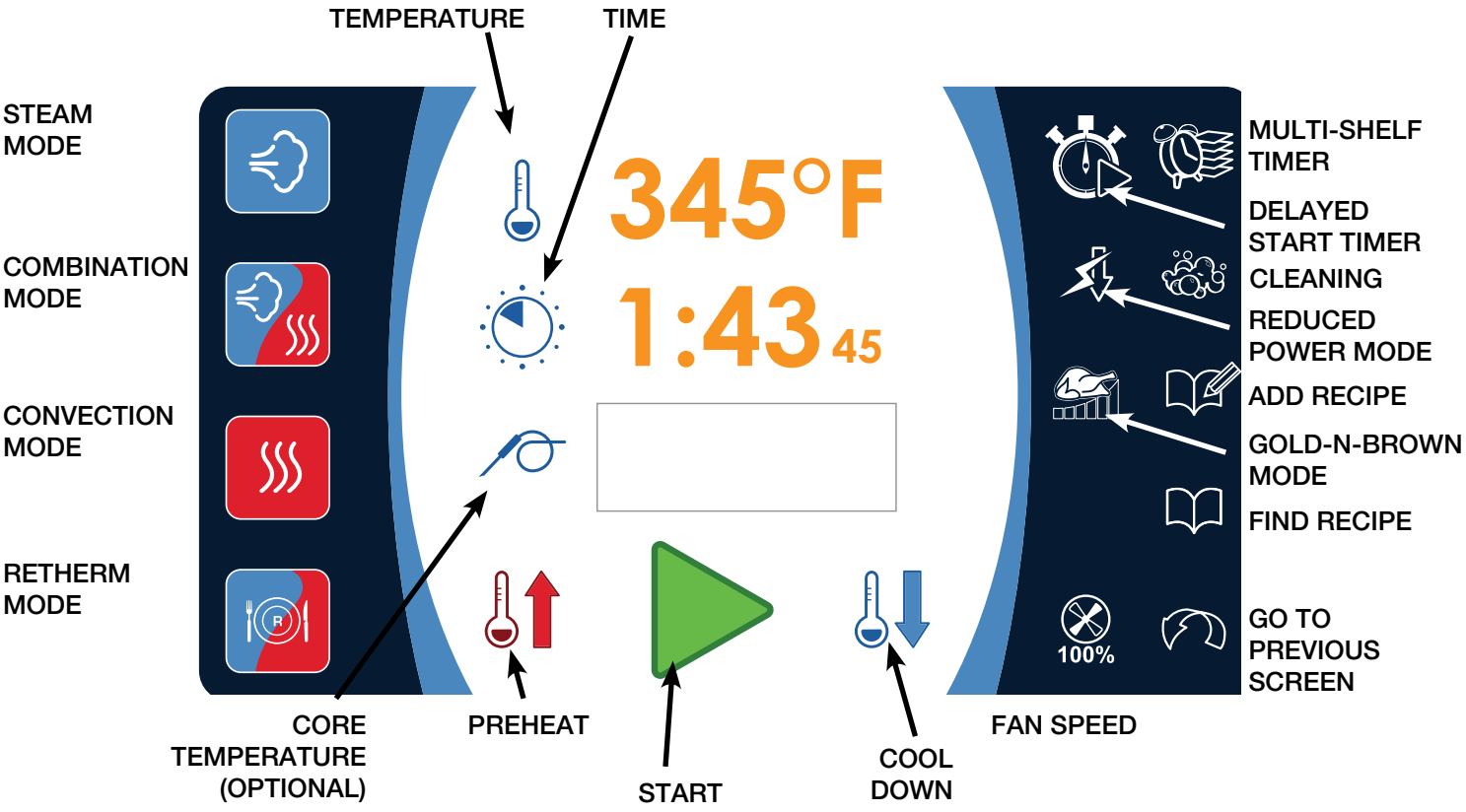
Upload Recipes
Copy ***all*** recipes from oven to USB memory stick.

Add All Recipes
Copy ***all*** recipes from USB memory stick to the oven. This will add the recipes to the beginning of the existing recipe list.

HACCP Data (optional)
Download data to a USB drive for review in a .txt file format.

EXPRESSTOUCH OPERATING INSTRUCTIONS

COOKING MODE SCREEN



COOKING MODE SCREEN IDENTIFICATION

MAIN MENU ICONS

Power ON key
Activates power to the oven and automatically fills the steam generator equipped models with water that will heat to a stand-by mode temperature of 188°F (77°C).

Power OFF key
Press once to initiate power shut down sequence to the oven. ***Note:*** Oven will not shut down during a cooking cycle. You may need to press harder due to the material thickness. Firmly press and hold the OFF key for 10 seconds to power down the oven ***ONLY IF*** the control has locked and is unresponsive.

Steam Mode
The oven will operate in the steam mode at a temperature range of 85°F to 250°F (30°C to 121°C).

- Automatic steaming at 212°F (100°C) factory-set default.
- Quick steaming between 213°F and 250°F (101°C and 121°C).
- Low temperature steaming between 85°F and 211°F (29°C and 99°C).

Combination Mode
Selection key for cooking with a combination of steam and convection heat. Can be set between 212°F to 485°F (100°C and 252°C).

Convection Mode
Selection key for convection cooking without steam at a temperature range of 85°F to 485°F (29°C to 252°C).

Retherm Mode
Food rethermalization or reheating mode will operate with automatic steam injection at a temperature range of 245°F to 320°F (120°C to 160°C).

Temperature
Used to set the required cooking temperature, to recall the set cooking temperature, or to check the actual oven temperature.

Time
Used to set the required cooking time or recall the set cooking time.

Core Temperature (optional)
Used to set the required internal product temperature, to recall the internal product temperature set by the operator, or to display the current internal temperature of the product.

Preheat Mode
Preheats the oven cavity to a temperature set by user.

Cool Down Mode
Lowers temperature of the oven cavity at an accelerated pace to temperature set by user.

Delayed Start Time
Quick and simple way to begin preheating your oven while you're away, and ready to go when you are.

Start/Stop
Initiates all cooking mode functions and programmed procedures stored in memory. Stops an activated cooking mode or programmed procedure currently in progress.

AUXILIARY FUNCTION ICONS

Reduced Power Mode
Used to reduce kitchen power peaks and energy consumption.

Gold-N-Brown Mode
This indicator will illuminate when the browning function is set by the operator in a timed or programmed cooking cycle in any mode. Level 1 provides least amount of browning, level 6 the most.

Fan Speed
This indicator will illuminate whenever the operator sets a reduced fan speed to protect products affected by high-velocity air movement.

Return to Previous Menu

Add Recipe
Used to create, change, duplicate, and delete programmed menus.

Find Recipe
Access a menu list of all stored cooking programs.

Multi-shelf Timer
Use separate timers for one or more shelves in the oven compartment (only visible in time mode).

Steam Injection (not shown on illustration)
Press to add moisture in any cooking mode. Steam will inject into the cavity as long as the icon is touched.

Delta-T Core Temperature (optional) - only visible in certain modes Cook by probe. Mode automatically adjusts cooking temperature in proportion to the internal temperature of the product.

EXPRESSTOUCH OPERATING INSTRUCTIONS

EXPRESSTOUCH FACTORY DEFAULT SETTINGS

COOKING MODE	OVEN TEMPERATURE	CORE TEMPERATURE	COOKING TIME
Steam	212°F (100°C)	160°F (70°C)	25 minutes
Combination Steam	350°F (175C)	160°F (70°C)	70 minutes
Convection	350°F (175°C)	160°F (70°C)	30 minutes
Retherm (available on ExpressTouch only)	275°F (135°C)	160°F (70°C)	5 minutes

STEAM MODE

The Steam mode provides the operator with the ability to steam, poach, or blanch. This mode will automatically steam at the boiling point of water; quick-steam above the boiling point for faster cooking results; or low temperature steam, below the boiling point, for more delicate products such as pâté, mousse, seafood, or custard.

PRESS ON BUTTON TO POWER OVEN ON.

PRESS THE STEAM MODE ICON.

PRESS THE START ICON TO STEAM AT THE DISPLAYED SETTINGS.

TO CHANGE THE DISPLAYED SETTINGS:

TOUCH THE DISPLAYED TEMPERATURE.

The cooking temperature will appear at the top of the temperature selection window. Type in desired temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

- Automatic Steaming 212°F (100°C)
- Quick Steaming 213°F to 250°F (101°C to 121°C)
- Low Temperature Steaming 85°F to 211°F (29°C to 99°C)

TO COOK BY TIME:

TOUCH THE DISPLAYED TIME.

The cooking time will appear at the top the time selection window. Type in desired time period or use up and down arrows to adjust time. When finished, touch the green check mark key to confirm change.

Or, to set Continuous Operation mode, press the --:-- icon and touch the green check mark key to confirm.

TO COOK BY PRODUCT CORE TEMPERATURE:

TOUCH THE PROBE ICON.

The previously set core temperature or oven control default setting will appear highlighted within the oven display. Touch the displayed core temperature. The internal product core temperature will appear at the top of the temperature selection window. Type in desired internal product core temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

Attach removable probe before activating core temperature function, and insert into product.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING IN STEAM MODE.

- The cavity set-temperature will appear in the display.
- If cooking by probe, the actual internal product temperature will appear next to the icon during operation. To change the set value for core temperature, press the temperature next to the icon and make changes as required.

When the cooking time has expired or the desired core temperature has been reached, an alarm will sound indicating the end of the operating mode.

- To stop the alarm, press the red stop icon or open the oven door.

TO STOP COOKING PROGRAM AT ANY TIME, PRESS RED STOP ICON.

STEAM MODE CHEF OPERATING TIPS

This mode will steam a full or partial load of a single product, or multiple products without transfer of flavors. When steaming multiple products, however, individual product cooking times must be taken into consideration.

The non-pressurized atmosphere of the Combitherm also provides the ability to open the door during the steam mode in order to monitor products more closely throughout the steaming process.

STEAM

Perforated, 2-1/2" deep pans (65mm) are particularly suitable for use in this program mode. These pans will provide a shorter cooking time and will prevent product over-cooking at the bottom of the pan.

Separate ice-encrusted vegetables before steaming to ensure even cooking.

A variety of products can be steamed at the same time but attention must be paid to the different cooking times required for each food product.

HIGH TEMP STEAM

High temperature steaming is suitable for hearty, root-type vegetables such as potatoes, turnips, carrots, and cabbage.

High temperature steaming provides a cooking time which is approximately 10-percent shorter than the regular steam mode temperature of 212°F (100°C).

Set the steam cooking temperature between 221°F (105°C) and 230°F (110°C) for small loads and between 230°F (110°C) and 250°F (121°C) for full loads.

LOW TEMP STEAM

The low temperature steam mode will function whenever the oven compartment temperature is below 212°F (100°C).

It will take longer to steam products using the low temperature steam mode.

Steaming sausages in low temperature steam prevents cracked or peeling skins.

Use low temperature steam for delicate foods such as shrimp, fish, seafood, and crème caramel.

For best results, low temperature steam all delicate food items at a temperature of 210°F (99°C) or below.

COMBINATION MODE

The Combination mode will prove to be the most versatile and widely used mode the Combitherm oven has to offer. It will produce the best possible results on the widest variety of products — all within the shortest period of time. The unique control function of this mode enables the operator to roast or bake with a combination of steam and convection heat. In addition to shorter cooking times, this combination of steam and heat offers less product shrinkage and more moisture retention than obtained in a standard convection oven.

PRESS ON BUTTON TO POWER OVEN ON.

PRESS THE COMBINATION MODE ICON.

The last set values or oven control default setting for temperature and time will appear in the display.

PRESS THE START ICON TO COOK AT THE DISPLAYED SETTINGS.

TO CHANGE THE DISPLAYED SETTINGS:

TOUCH THE DISPLAYED TEMPERATURE.

The cooking temperature will appear at the top of the temperature selection window. Type in desired temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

- Cooking temperature range: 212 to 485 °F (100 to 252°C)

TO COOK BY TIME:

TOUCH THE DISPLAYED TIME.

The cooking time will appear at the top the time selection window. Type in desired time period or use up and down arrows to adjust time. When finished, touch the green check mark key to confirm change.

Or, to set Continuous Operation mode, press the --:-- icon and touch the green check mark key to confirm.

TO COOK BY PRODUCT CORE TEMPERATURE:

TOUCH THE PROBE ICON.

The previously set core temperature or oven control default setting will appear highlighted within the oven display. Touch the displayed core temperature. The internal product core temperature will appear at the top of the temperature selection window. Type in desired internal product core temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

Attach removable probe before activating core temperature function, and insert into product.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING IN COMBINATION MODE.

- The temperature and remaining cooking time will appear in the display.
- If cooking by probe, the actual internal product temperature will appear next to the icon during operation. To change the set value for core temperature, press the temperature next to the icon and make changes as required.

PRESS FOR STEAM INJECTION AT ANY TIME DURING COOKING. Steam will inject into the cavity as long as the icon is touched.

When the cooking time has expired or the operator set internal temperature has been reached, an alarm will sound indicating the end of the operating mode.

- To stop the alarm, press the red stop icon or open the oven door.

TO STOP COOKING PROGRAM AT ANY TIME, PRESS RED STOP ICON.

COMBINATION MODE CHEF OPERATING TIPS

The Combination mode injects the optimum amount of steam automatically. There is no need to select moisture levels. Foods do not dry out. Flavors are retained with no transfer of flavors when mixing product loads.

Due to automatic steam adjustment, the door can be opened at any time during a cooking operation. Be certain to observe the safety warning when opening the oven door.

The Combination mode is particularly efficient when used for baking, broiling, grilling, stewing, braising, and roasting.

When using the Combination mode, cooking temperatures can be reduced 10- to 20-percent below the temperatures used for conventional cooking methods.

Cooking time will be reduced approximately 40-percent when cooking at the same temperature used for convection oven cooking and up to 50- to 60-percent less time when cooking at the same temperature used for a conventional oven.

Food browning in the Combitherm begins at a cooking temperature of approximately 250°F (120°C).

A higher cooking temperature results in heavier browning but also results in greater product weight loss. To achieve additional browning use the Moisture Vent Key or set Gold-n-Brown into the product procedure. Gold-n-Brown is particularly useful for adding color to high moisture products such as chicken and other poultry items or for additional browning of full loads and other moist products.

The Combination mode provides even browning without the necessity to turn the pans.

For more even cooking, do not cook in pans deeper than 4" (100mm).

CONVECTION MODE

The Convection mode operates with hot circulated air within a temperature range of 85° to 485°F (29 to 252°C). For many applications, better results may be achieved with the Combination mode; therefore, the operator may want to consider using the Convection mode on a more limited basis.

PRESS ON BUTTON TO POWER OVEN ON.

PRESS THE CONVECTION MODE ICON.

The last set values or oven control default setting for temperature and time will appear in the display.

PRESS THE START ICON TO COOK AT THE DISPLAYED SETTINGS.

TO CHANGE THE DISPLAYED SETTINGS:

TOUCH THE DISPLAYED TEMPERATURE.

The cooking temperature will appear at the top of the temperature selection window. Type in desired temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

- Cooking temperature range: 85 to 485 °F (29 to 252°C)

TO COOK BY TIME:

TOUCH THE DISPLAYED TIME.

The cooking time will appear at the top the time selection window. Type in desired time period or use up and down arrows to adjust time. When finished, touch the green check mark key to confirm change.

Or, to set Continuous Operation mode, press the --:-- icon and touch the green check mark key to confirm.

TO COOK BY PRODUCT CORE TEMPERATURE:

TOUCH THE PROBE ICON.

The previously set core temperature or oven control default setting will appear highlighted within the oven display. Touch the displayed core temperature. The internal product core temperature will appear at the top of the temperature selection window. Type in desired internal product core temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

Attach removable probe before activating core temperature function, and insert into product.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING IN COMBINATION MODE.

- The temperature and remaining cooking time will appear in the display.
- If cooking by probe, the actual internal product temperature will appear next to the icon during operation. To change the set value for core temperature, press the temperature next to the icon and make changes as required.

PRESS FOR STEAM INJECTION AT ANY TIME DURING COOKING. Steam will inject into the cavity as long as the icon is touched.

When the cooking time has expired or the operator set internal temperature has been reached, an alarm will sound indicating the end of the operating mode.

- To stop the alarm, press the red stop icon or open the oven door.

TO STOP COOKING PROGRAM AT ANY TIME, PRESS RED STOP ICON.

CONVECTION MODE CHEF OPERATING TIPS

The Convection Mode can be used to roast or bake products needing very short cooking times or for high moisture products such as muffins, cakes, and cookies, or for browning the surface of the product.

The Convection mode works best with foods containing little moisture or for very moist food which require a dryer finished product.

For baking, preheat the Combitherm at a temperature of 325°F to 375°F (163°C to 191°C). Once preheated, reset the temperature as required.

A higher cooking temperature results in heavier browning but also results in greater product weight loss. To achieve additional browning use the Moisture Vent Key or set the Browning Feature into the product procedure.

RETHERM MODE

The Retherm mode operates with hot circulated air within a temperature range of 245° to 320°F (120° to 160°C).

PRESS ON BUTTON TO POWER OVEN ON.

PRESS THE RETHERM MODE ICON.

The last set values or oven control default setting for temperature and time will appear in the display.

PRESS THE START ICON TO COOK AT THE DISPLAYED SETTINGS.

TO CHANGE THE DISPLAYED SETTINGS:

TOUCH THE DISPLAYED TEMPERATURE.

The cooking temperature will appear at the top of the temperature selection window. Type in desired temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

- Cooking temperature range: 245 to 320 °F (120 to 160°C)

TO COOK BY TIME:

TOUCH THE DISPLAYED TIME.

The cooking time will appear at the top the time selection window. Type in desired time period or use up and down arrows to adjust time. When finished, touch the green check mark key to confirm change.

Or, to set Continuous Operation mode, press the --:-- icon and touch the green check mark key to confirm.

TO COOK BY PRODUCT CORE TEMPERATURE:

TOUCH THE PROBE ICON.

The previously set core temperature or oven control default setting will appear highlighted within the oven display. Touch the displayed core temperature. The internal product core temperature will appear at the top of the temperature selection window. Type in desired internal product core temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

Attach removable probe before activating core temperature function, and insert into product.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING IN COMBINATION MODE.

- The temperature and remaining cooking time will appear in the display.
- If cooking by probe, the actual internal product temperature will appear next to the icon during operation. To change the set value for core temperature, press the temperature next to the icon and make changes as required.

PRESS FOR STEAM INJECTION AT ANY TIME DURING COOKING. Steam will inject into the cavity as long as the icon is touched.

When the cooking time has expired or the operator set internal temperature has been reached, an alarm will sound indicating the end of the operating mode.

- To stop the alarm, press the red stop icon or open the oven door.

TO STOP COOKING PROGRAM AT ANY TIME, PRESS RED STOP ICON.

RETHERM MODE CHEF OPERATING TIPS

Since plated meals consist of dissimilar products, there are several important factors to consider in order to produce the finest results. Product density (compactness), thickness, quantity of product on each plate, and quantity of plates all relate to the length of time necessary to reheat. Again, experience is the best method to determine reheating time. Once the time has been determined and recorded for a specific meal, the results will be consistent for future reheating times.

HELPFUL HINTS FOR REHEATING ON THE PLATE

- ALL FOOD COMPONENTS ON THE PLATE SHOULD BE OF SIMILAR DENSITIES.
- ALL FOOD COMPONENTS ON THE PLATE SHOULD BE SIMILAR IN THICKNESS.
- ARRANGE ALL FOOD COMPONENTS EVENLY ON THE PLATE.
- AVOID EXCESSIVE OVERLAPPING OF PRODUCT.
- SAUCES MUST BE HEATED AND ADDED TO PRODUCT AFTER REHEATING.
- A MIXED VARIETY OF MEALS CAN BE REHEATED AT THE SAME TIME.

À LA CARTE RETHERMALIZATION

À la carte rethermalization is designed to take a single plate from a refrigerated temperature to serving temperature for immediate service. Plates are prepared in advance, covered, and refrigerated. Preheat the Combitherm oven. Remove plate from refrigeration and place in the oven at 275°F (135°C) for an uncovered plate or 300°F (150°C) for a covered plate. Plates with meat components will take more time than plates containing all vegetable components. Follow internal temperature requirements for reheating and allow for override time. After reheating, remove the plate from the oven, add any sauces, garnish, and serve. This process can be repeated as required.

For the most efficient continuous service, it is suggested that the Combitherm oven be dedicated to the rethermalization process during serving hours.

RETHERMALIZING PREFABRICATED AND VACUUM-PACKED FROZEN FOODS

For bulk product rethermalization, completely defrost product bags in walk-in cooler. DO NOT REMOVE PRODUCT FROM THE BAG. Load thawed bags in preheated oven and rethermalize in the Low Temperature Steam mode until the required internal temperature is reached. Place rethermalized bags in a preheated holding cabinet set at 140° to 165°F (60° to 74°C) until ready for service.

PLATE COVERS MUST BE USED FOR ON-THE-PLATE REGENERATION.

CORE TEMPERATURE PROBE MODE (OPTIONAL)

As an alternative to timer operation, the Core Temperature Probe mode can be used in conjunction with any program mode to cook by sensing internal product temperature using the included probe. For a more accurate internal temperature, an optional, specialized, Combitherm product probe senses temperature from four strategic points and displays a temperature average.

PRESS ON BUTTON TO POWER OVEN ON.

ATTACH REMOVABLE PROBE BEFORE ACTIVATING CORE TEMPERATURE FUNCTION, AND INSERT INTO PRODUCT.

The probe must be inserted so that the tip is positioned in the center of the food mass. For liquid or semi-liquid foods, suspend the probe in the center of the product and secure the probe wire to the edge of the container.

PRESS THE REQUIRED COOKING MODE ICON. The last set values or oven control default setting for temperature and time will appear in the display.

PRESS THE START ICON TO COOK AT THE DISPLAYED SETTINGS, OR

TOUCH THE DISPLAYED TEMPERATURE.

The cooking temperature will appear at the top of the temperature selection window. Type in desired temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

TOUCH THE PROBE ICON.

The previously set core temperature or default setting will appear highlighted within the oven display. Touch the displayed core temperature. The internal product core temperature will appear at the top of the temperature selection window. Type in desired internal product core temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING.

- The actual internal product temperature will appear next to the icon during operation. To change the set value for core temperature, press the temperature next to the icon and make changes as required.

PRESS FOR STEAM INJECTION AT ANY TIME DURING COOKING. Steam will inject into the cavity as long as the icon is touched.

When the operator-set internal temperature has been reached, an alarm will sound indicating the end of the operating mode.

- To stop the alarm, press the red stop icon or open the oven door.

TO STOP COOKING PROGRAM AT ANY TIME, PRESS RED STOP ICON.

NOTE: CALIBRATE THE EXPRESSTOUCH OVEN PROBE

With ExpressTouch oven on, fill a pitcher of ice water and place inside the combi oven.

Insert probe into the pitcher of ice water.

Check the temperature by selecting the “probe” button on the cooking mode menu.

Once the temperature reading is 35 degrees, press the back arrow button in the lower left hand corner of the screen to return to the main menu screen.

Press the “Settings” button.

Press the “Probe” button.

Adjust the temperature control back 3 degrees using the minus key, then press the back arrow to return to the “Settings” screen.

The probe has now been calibrated to the correct temperature.

DELTA-T CORE TEMPERATURE COOKING MODE (OPTIONAL)

This special program function cooks by internal product temperature with the use of the probe. Unlike the standard core temperature mode however, the Delta-T oven temperature automatically increases in direct proportion to the internal temperature of the product. The Delta-T mode can be used with both convection and combination modes, providing a more gentle method of cooking. Browning occurs toward the end of the cooking cycle.

PRESS THE ON BUTTON TO POWER OVEN ON.

INSERT PROBE INTO PRODUCT.

The probe must be inserted so that the tip is positioned in the center of the food mass. For liquid or semi-liquid foods, suspend the probe in the center of the product and secure the probe wire to the edge of the container.

PRESS THE REQUIRED COOKING MODE ICON. The last set values or oven control default setting for temperature and time will appear in the display.

TOUCH THE PROBE ICON.

The previously set core temperature or default setting will appear highlighted within the oven display. Touch the displayed core temperature. The internal product core temperature will appear at the top of the temperature selection window. Type in desired internal product core temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

PRESS THE DELTA-T ICON THAT APPEARS IN THE LOWER RIGHTT CORNER OF THE TOUCH SCREEN.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING.

- The actual internal product temperature will appear next to the icon during operation. To change the set value for core temperature, press the temperature next to the icon and make changes as required.

PRESS FOR STEAM INJECTION AT ANY TIME DURING COOKING. Each push of the icon will release one pulse of steam.

When the operator-set internal temperature has been reached, a alarm will sound indicating the end of the operating mode.

- To stop the alarm, press the red stop icon or open the oven door.

TO STOP COOKING PROGRAM AT ANY TIME, PRESS RED STOP ICON.

AUXILIARY FUNCTIONS

All auxiliary functions can be engaged at any time during any cooking mode and can be programmed into cooking procedures. At the end of a cooking mode or program, the oven automatically disengages all auxiliary functions.

PREHEATING FEATURE

SELECT DESIRED COOKING MODE.

PRESS PREHEAT ICON.

The preheat temperature will appear at the top of the preheat temperature selection window. Type in desired temperature or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

When the preheat temperature has been reached, a alarm will sound indicating the end of the preheat function. To stop the alarm, press the red stop icon . The preheat temperature will be maintained if the stop icon is not pressed.

GOLD-N-BROWN FEATURE

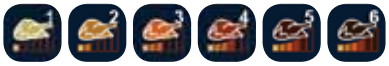
The browning feature is an automatic function designed to regulate humidity to provide additional color to products as needed. This feature is particularly useful for adding color to high moisture products such as chicken and other poultry items, or for additional browning of full loads and other moist products. In addition, this feature may be used to add texture to fried items such as french fries or breaded chicken. Gold-n-Brown can be used in any cooking mode and can be programmed into a cooking procedure.

Browning can be used for any product. Depending on the type of product and product load, the browning feature may also slightly increase the set cooking time in order to fully complete the browning function. This is a standard operating condition of this feature.

SELECT DESIRED COOKING MODE.

ADJUST TEMPERATURE AND TIME SETTINGS.

PRESS THE GOLD-N-BROWN ICON.

 Choose the desired Gold-n-Brown level. (Level 1 provides least amount of browning, level 6 the most.) After a level has been selected, the previous screen will be displayed and the Gold-n-Brown icon will be highlighted.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING.

The oven will engage the browning feature in the cooking mode set by the operator. Gold-N-Brown can be used in steam mode to reduce moisture.

OVEN COOL DOWN FEATURE

The cool-down feature provides the operator with the ability to lower the temperature of the oven compartment at an accelerated pace. This function is useful when it is necessary to immediately change from a high temperature cooking function to a lower temperature function or to the steam program. This function is also useful to help cool the oven compartment in preparation for cleaning.

CHEF OPERATING TIP

When using the cool-down feature in preparation for cleaning, it is important to remember that the temperature in the display indicates the air temperature inside the oven compartment and not the interior walls of the oven. Always allow the oven walls to cool to a minimum of 140°F (60°C) before spraying the compartment with oven cleaner.

PRESS COOL DOWN ICON.

The cool down temperature will appear at the top of the cool down temperature selection window. Type in desired temperature between 50 and 200°F (10 and 93°C) or use up and down arrows to adjust temperature. When finished, touch the green check mark key to confirm change.

OPEN OVEN DOOR.

A alarm will sound indicating the end of the cool down function. Press the red stop icon to stop the alarm.

AUXILIARY FUNCTIONS

REDUCED FAN SPEED

The reduced fan speed function is useful for flow-sensitive products such as soufflés and meringues, or any products affected by a high velocity of air movement.

SELECT DESIRED COOKING MODE AND SET MODE FUNCTIONS.

PRESS FAN SPEED ICON.

The FAN SPEED icon toggles between 100% and 50%.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING.

REDUCED POWER

The reduced power function can be used to reduce kitchen power peaks and energy consumption.

SELECT DESIRED COOKING MODE AND SET MODE FUNCTIONS.

PRESS REDUCED POWER ICON.

The REDUCED POWER icon will be highlighted.

PRESS THE GREEN START ARROW ICON TO BEGIN COOKING.

The oven will operate with reduced power in whatever cooking mode is set by the operator.

NOTE: Reduced power will result in longer cooking times.

MULTI-SHELF TIMER

The multi-shelf timer allows the operator to program alarm times for the oven shelves. This can be one common time for all shelves or individual times.

SET COOKING MODE, TEMPERATURE AND TIME. The time set by the user will be the default time for the shelf timers.

PRESS THE MULTI-SHELF TIMER ICON.

ADJUST TIME SETTINGS FOR EACH SHELF AND PRESS GREEN CHECK MARK KEY TO CONFIRM CHANGE.

PRESS THE GREEN START ARROW ICON FOR EACH INDIVIDUAL SHELF. The unit will immediately start running in continuous operation mode.

When time expires for a shelf, the time background will turn red and an alarm will sound.

OPEN THE DOOR OR PRESS THE RED STOP ICON TO SILENCE ALARM. Remove food as appropriate.

STEAM INJECTION

Press to add moisture while in any cooking mode. Steam will inject into the cavity as long as the icon is touched.

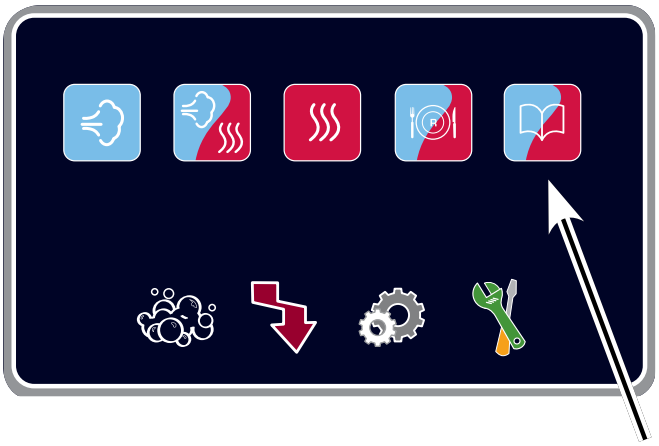
PREPROGRAMMED RECIPES

The ExpressTouch Combitherm comes preprogrammed with more than 100 recipes covering most commonly prepared food items. ExpressTouch also allows you to save up to 250 of your recipes.

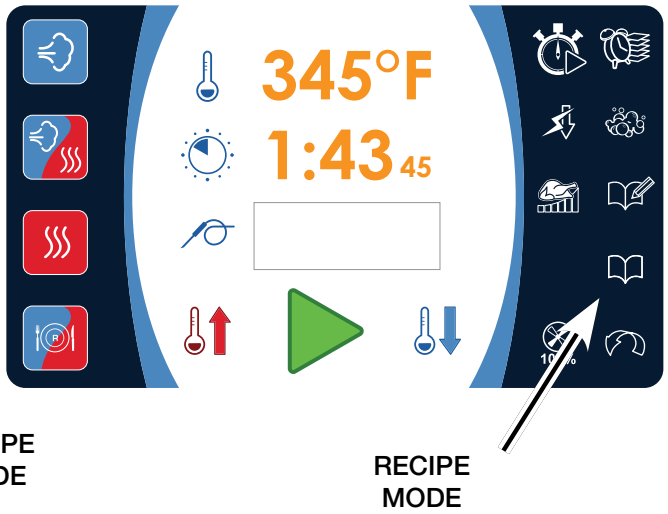
Navigate to desired recipe icon using NEXT and PREVIOUS SCREEN arrows. Press recipe description for desired recipe. Cooking steps will start immediately. (*See 24-33 for a list of all preprogrammed recipes.*)

Select RECIPE MODE from any screen.

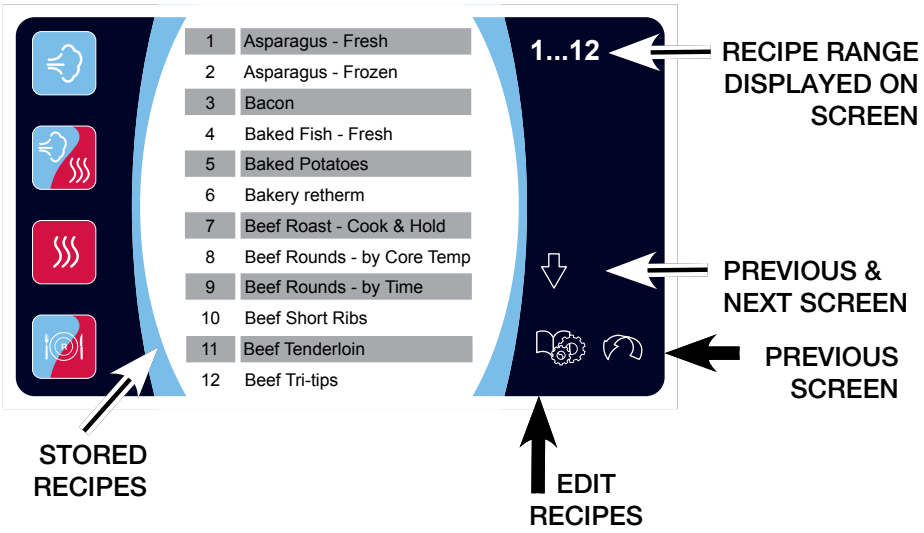
MAIN MENU SCREEN



COOKING MODE MENU



RECIPE MENU



RECIPE PROGRAMMING VIA THE TOUCHSCREEN

ADD A RECIPE

The recipe programming function allows the operator to program a cooking procedure using multiple cooking modes and any auxiliary functions desired. Recipes remain programmed until deleted by the operator.

1. Select any cooking mode.
2. Click ADD RECIPE icon.
3. Select first desired cooking mode. Last input temperature, time and probe setting will be displayed.
4. Change temperature, time and/or cook by probe as desired.
5. Change auxiliary functions as desired (fan speed, Gold-N-Brown, etc.)
6. When finished with cooking step, press WRITE icon. Will display next cooking step programming screen.
7. Repeat steps 3 through 6 for each cooking step or press if only one step in recipe.
8. When finished programming recipe, touch the CONFIRM CHANGES icon.
9. A keypad will appear. Input name of recipe. Press CONFIRM CHANGES icon.
10. The saved recipe will appear as the first recipe in the list.
11. Touch the newly saved recipe icon. Cooking steps in recipe will immediately start.

EDIT A RECIPE

To edit an existing default or user-programmed recipe:

1. Select RECIPE SETTINGS MODE from the Recipe Menu. The touch screen background will turn red to indicate that the user is in EDIT MODE.
2. Press the recipe to be edited. Selected recipe will be outlined.
3. Press EDIT RECIPE. The first cooking step in the recipe will be displayed.

   Or click DELETE RECIPE to remove recipe.

   Click CONFIRM CHANGES to confirm deletion.
4. Edit cooking mode, temperature, time, probe temperature and/or auxiliary functions.
5. Press CONFIRM CHANGES. A keyboard will appear. Edit the title as appropriate.

   Press CONFIRM CHANGES at the bottom of the keyboard.
6. Press CONFIRM CHANGES at the bottom of the touch screen to exit EDIT RECIPE mode.

PREPROGRAMMED RECIPES

BAKERY RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning
Bakery retherm	Retherm	275°F (135°C)	4 minutes	100%	--
Brownies	Convection	325°F (163°C)	25 minutes	100%	--
Cinnamon Rolls	Combination	350°F (177°C)	20 minutes	100%	--
Cookies	Convection	325°F (163°C)	12 minutes	50%	--
Croissants	Combination	325°F (163°C)	15 minutes	50%	--
Danish Pastry	Combination	350°F (177°C)	15 minutes	100%	--
Dinner Rolls	Combination	350°F (177°C)	10 minutes	100%	--
French Bread	Combination	350°F (177°C)	20 minutes	100%	--
Fruit Bread	Combination	300°F (149°C)	50 minutes	100%	--
Fruit Pie	Combination	340°F (171°C)	30 minutes	100%	--
Muffins	Convection	325°F (163°C)	15 minutes	50%	--
Par-baked Bread (frozen)	Combination	340°F (171 °C)	15 minutes	100%	--
Par-baked Rolls	Combination	350°F (177°C)	10 minutes	100%	--
Proofing	Low Temp Steam	90°F (32°C)	30 minutes	50%	--
Puff Pastry	Combination	350°F (177°C)	10 minutes	100%	--
Sheet Cake	Convection	325°F (163°C)	20 minutes	50%	--

PREPROGRAMMED RECIPES

CONVENIENCE PRODUCT RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Chicken Wings	Combination	400°F (204°C)	10 minutes	100%	2
Corn Dogs	Combination	350°F (177°C)	18 minutes	100%	1
Egg Rolls	Combination	375°F (191°C)	15 minutes	100%	3
Frozen Entrée: Cabbage Rolls	Combination	350°F (177°C)	160°F probe (71°C)	100%	--
Frozen Entrée: Chicken Primavera	Combination	350°F (177°C)	160 minutes	100%	--
Frozen Entrée: Macaroni & Beef	Combination	350°F (177°C)	145 minutes	100%	--
Frozen Entrée: Macaroni & Cheese	Combination	350°F (177°C)	140 minutes	100%	--
Frozen Entrée: Meat Lasagna	Combination	350°F (177°C)	150 minutes	100%	--
Frozen Entrée: Ratatouille	Combination	350°F (177°C)	35 minutes	100%	--
Frozen Entrée: Stuffed Peppers	Combination	350°F (177°C)	150 minutes	100%	--
Hamburger Patties - Frozen	Combination	350°F (177°C)	12 minutes	100%	4
Hamburger Patties - Thawed	Combination	350°F (177°C)	5 minutes	100%	--
Hot Dogs - Low Temp Steam	Low Temp Steam	160°F (71°C)	13 minutes	50%	--
Hot Dogs - Steamed	Steam	212°F (100°C)	10 minutes	100%	--
Mini Pizza	Combination	350°F (177°C)	10 minutes	100%	--
Precooked Chicken Pieces - Frozen (MRB)	Convection	365°F (185°C)	30 minutes	100%	3

(CONTINUED ON NEXT PAGE)

CONVENIENCE PRODUCT RECIPES (CONTINUED)

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Precooked Chicken Pieces - Refrigerated	Convection	325°F (163°C)	20 minutes	100%	1
Spring Rolls	Combination	375°F (191°C)	15 minutes	100%	--
Tater Tots	Combination	375°F (191°C)	10 minutes	100%	3

PREPROGRAMMED RECIPES

FISH & SEAFOOD RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Baked Fish - Fresh	Combination	400°F (204°C)	6 minutes	100%	2
Grilled Fish Fillets	Combination	460°F (238°C)	4 minutes	100%	--
Lobster - Whole	Steam	195°F (91°C)	13 minutes	50%	--
Salmon - Filets	Low Steam	145°F (63°C)	7 minutes	50%	--
Salmon - Steaks	Steam	145°F (63°C)	8 minutes	100%	--
Shrimp - Steamed	Low Steam	160°F (71°C)	12 minutes	50%	--

PREPROGRAMMED RECIPES

MEAT RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Bacon	Combination	375°F (191°C)	10 minutes	100%	--
Beef Roast Cook & Hold	(1) Delta-T	125°F (52°C)	Probe 120°F (46°C)	50%	--
	(2) Steam	135°F (57°C)	Continuous	50%	2
Beef Rounds - by Core Temp	Delta-T	130°F (54°C)	Probe 125°F (52°C)	100%	1
Beef Rounds - by Time	Combination	250°F (121°C)	130 minutes	100%	--
Beef Short Ribs	Combination	275°F (135°C)	90 minutes	100%	--
Beef Tenderloin	Combination	250°F (121°C)	Probe 125°F (52°C)	100%	2
Beef Tri-tips	Combination	250°F (121°C)	Probe 125°F (52°C)	100%	3
Breakfast Sausage Links	Combination	350°F (177°C)	8 minutes	100%	--
Grilled Pork Chops	Combination	460°F (238°C)	6 minutes	100%	1
Grilled Steaks	Combination	460°F (238°C)	Probe 130°F (54°C)	100%	--
Ham - by Core Temp	Delta-T	125°F (52°C)	Probe 150°F (66°C)	50%	--
Leg of Lamb - by Core Temp	Delta-T	125°F (52°C)	Probe 130°F (54°C)	100%	2
Meat Loaf - by Core Temp	Combination	275°F (135°C)	Probe 155°F (68°C)	100%	3
Pork - Back Ribs - Raw	Combination	250°F (121°C)	45 minutes	100%	--

(CONTINUED ON NEXT PAGE)

MEAT RECIPES (CONTINUED)

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Pork - Loin Roast - by Core Temp	Combination	300°F (149°C)	Probe 150°F (66°C)	100%	2
Pork Ribs Reheat	Combination	400°F (204°C)	7 minutes	100%	--
Rack of Lamb - by Core Temp	Delta-T	130°F (54°C)	130 minutes	100%	2
Sausage - Fresh - by Low Temp Steam	Low Temp Steam	160°F (71°C)	15 minutes	50%	--

PREPROGRAMMED RECIPES

MISCELLANEOUS RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Casseroles - by Core Temp	Combination	350°F (177°C)	Probe 150°F (66°C)	100%	--
Casseroles - Time	Combination	350°F (177°C)	30 minutes	100%	--
Custard/Crème Brulee	Low Temp Steam	190°F (88°C)	45 minutes	50%	1
Eggs - Hardboiled	Steam	212°F (100°C)	12 minutes	100%	--
Eggs - Poached - Low Temp Steam	Low Temp Steam	170°F (77°C)	5 minutes	50%	--
Eggs - Poached - Steamed	Steam	212°F (100°C)	3 minutes	100%	--
Eggs - Scrambled in bag; shake at 18 minutes	Steam	212°F (100°C)	25 minutes	100%	--
Eggs - Scrambled in pan	Steam	212°F (100°C)	15 minutes	100%	--
Eggs - Sous Vide	Steam	148°F (64°C)	45 minutes	50%	--
French Fries - Full Load	(1) Convection	400°F (204°C)	1 minute	100%	4
	(2) Combination	400°F (204°C)	9 minutes	100%	2
Pasta	Steam	212°F (100°C)	20 minutes	100%	--
Pate en Croute - by Core Temp	(1) Convection	350°F (177°C)	10 minutes	100%	--
	(2) Combination	350°F (177°C)	Probe 135°F (57°C)	100%	--
Pizza - Fresh	Combination	400°F (204°C)	10 minutes	50%	1
Rice	Steam	212°F (100°C)	20 minutes	100%	--
Soup in Bag	Steam	230°F (110°C)	50 minutes	100%	--
Tamales	Steam	212°F (100°C)	30 minutes	100%	--

PREPROGRAMMED RECIPES

POULTRY RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Chicken - Frozen Pieces	Combination	350°F (177°C)	30 minutes	100%	3
Chicken - Oven Fried Pieces	Combination	450°F (232°C)	18 minutes	100%	--
Chicken - Thawed Whole	Combination	350°F (177°C)	35 minutes	100%	1
Chicken - Thawed Whole - by Core Temp	Combination	350°F (177°C)	Probe 175°F (79°C)	100%	1
Chicken baked - Thawed Pieces	Combination	375°F (191°C)	Probe 170°F (77°C)	100%	2
Duck Pieces - Raw	Combination	375°F (191°C)	25 minutes	100%	4
Duck Whole - by Core Temp	(1) Combination	250°F (121°C)	15 minutes	100%	--
	(2) Combination	300°F (149°C)	10 minutes	100%	--
	(3) Combination	400°F (204°C)	Probe 175°F (79°C)	100%	3
Galantine - by Core Temp	Low Temp Steam	160°F (71°C)	Probe 135°F (79°C)	50%	--
Grilled Chicken Breasts	Combination	460°F (238°C)	6 minutes	100%	--
Turkey Breast - Precooked - by Time	Combination	275°F (135°C)	Probe 155°F (68°C)	50%	--
Turkey Breast - Raw - by Core Temp	Combination	275°F (135°C)	Probe 155°F (68°C)	50%	1

PREPROGRAMMED RECIPES

VEGETABLE RECIPES

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Asparagus - Fresh	Steam	190°F (88°C)	3 minutes	50%	--
Asparagus - Frozen	Steam	212°F (100°C)	5 minutes	100%	--
Baked Potatoes	Combination	350°F (177°C)	40 minutes	100%	1
Beets - Fresh	Steam	230°F (110°C)	20 minutes	100%	--
Broccoli - Fresh	Steam	212°F (100°C)	6 minutes	100%	--
Broccoli - Frozen	Steam	212°F (100°C)	3 minutes	100%	--
Brussel Sprouts - Frozen	Steam	212°F (100°C)	6 minutes	100%	--
Cabbage - Fresh	Steam	212°F (100°C)	10 minutes	100%	--
Carrots - Fresh	Steam	225°F (107°C)	10 minutes	100%	--
Carrots - Frozen	Steam	212°F (100°C)	6 minutes	100%	--
Cauliflower - Fresh	Steam	212°F (100°C)	5 minutes	100%	--
Cauliflower - Frozen	Steam	212°F (100°C)	4 minutes	100%	--
Corn (Kernels) - Frozen	Steam	212°F (100°C)	4 minutes	100%	--
Corn-on-the-Cob - Fresh	Steam	212°F (100°C)	14 minutes	100%	--
Corn-on-the-Cob - Frozen	Steam	212°F (100°C)	10 minutes	100%	--

(CONTINUED ON NEXT PAGE)

VEGETABLE RECIPES (CONTINUED)

Recipe	Oven Mode	Temp	Time	Fan Speed	Browning Level
Green Beans - Fresh	Steam	212°F (100°C)	8 minutes	100%	--
Green Beans - Frozen	Steam	212°F (100°C)	5 minutes	100%	--
Parsnips - Fresh	Steam	230°F (110°C)	10 minutes	100%	--
Peas - Frozen	Steam	212°F (100°C)	4 minutes	100%	--
Potatoes, Red or Salad	Steam	212°F (100°C)	30 minutes	100%	--
Squash - Fresh	Steam	212°F (100°C)	3 minutes	100%	--
Turnips - Fresh	Steam	230°F (110°C)	10 minutes	100%	--
Zucchini - Fresh	Steam	212°F (100°C)	3 minutes	100%	--

HACCP ACCESS

The ExpressTouch Combitherm meets the requirements of established HACCP criteria by providing automated sampling, record keeping, set-point validation, recipe used, dates and time. Data is captured when Core Temperature Probe cooking method is chosen. This information can be downloaded to a USB drive and then copied to your computer. The file format is text (.txt).

NOTE: You can access this information from the Upload/Download Screen. *See illustrations on page 6 for navigation.*

CAUTION: The CombiOven USB port is not recommended for use with personal hand held devices.

1. To download the data collected, remove the cap of a USB port located on the side of the oven and insert the USB flash drive. If the flash drive is not recognized by the Combitherm, a question mark will appear on screen. Try again with another flash drive device or call Alto-Shaam Service.
2.

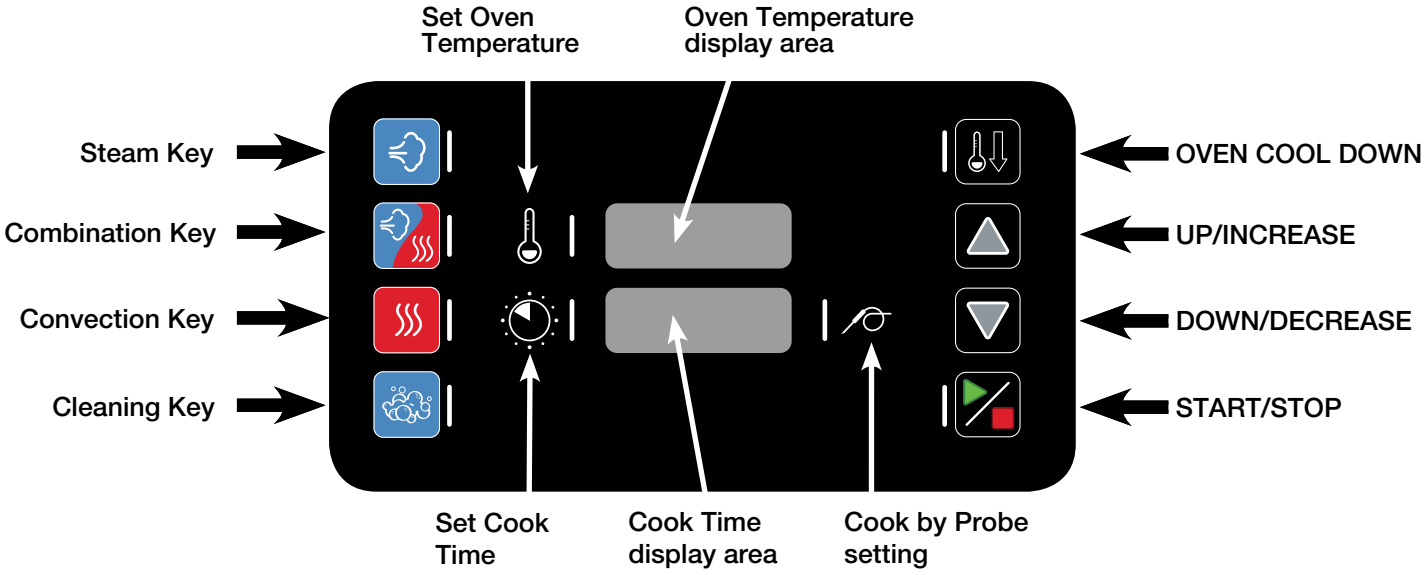
PRESS TO DOWNLOAD INFORMATION.
3. WAIT FOR THE ICON TO CHANGE FROM LOADING TO COMPLETE.
4. PRESS TO CONFIRM TRANSFER.
5. Remove the USB flash drive and replace the cap on the USB port.

The download process will automatically create a folder on the USB flash drive titled "haccp". Each text file contains cooking program specifics. *See illustration below.*

```
HACCP
Unit:                          00:30:D6:FF:28:63

Date:                          2011-01-09
Program:                       Steam

Start time:                    22:10:31
Stop time:                     22:14:37
Elapsed cook time:             00:04

Multi shelf timer:             no
Reduced energy:                no
Recipe active:                 no

Temperature unit:               °F

Cavity start temperature:      191
Cavity stop temperature:       217
Cavity temperature reached:    00:02

Core start temperature:        176
Core stop temperature:         215
Core temperature reached:      00:00

Door open count:               0
```

SIMPLE CONTROL OPERATING INSTRUCTIONS

CONTROL PANEL IDENTIFICATION



The Steam mode provides the operator with the ability to steam, poach, or blanch. This mode will automatically steam at the boiling point of water; quick-steam above the boiling point for faster cooking results; or low temperature steam, below the boiling point, for more delicate products such as pâté, mousse, seafood, or custard.

The Combination mode will prove to be the most versatile and widely used mode the Combitherm oven has to offer. It will produce the best possible results on the widest variety of products — all within the shortest period of time. The unique control function of this mode enables the operator to roast or bake with a combination of steam and convection heat. In addition to shorter cooking times, this combination of steam and heat offers less product shrinkage and more moisture retention than obtained in a standard convection oven.

The Convection mode operates with hot circulated air within a temperature range of 85° to 485°F (29 to 252°C). For many applications, better results may be achieved with the Combination mode; therefore, the operator may want to consider using the Convection mode on a more limited basis.

Oven Cool Down Process:

- Cooking process must be inactive
- Press "Cool Down" button until LED lights (LED remains ON while in Cool Down mode)
- Press "Decrease Value" or "Increase Value" to adjust cool down temperature
- Cook temperature display area is used to display cool down temperature
- Display will show last valid cool down temperature
- Cool down temperature range is 85° - 575°F (30° - 300°C)
- Press "Start/Stop" until LED lights to accept cool down temperature and initiate cool down process
- Door must be open to start cool down process; Cook time display area will display "door" if door is not open
- Cook temperature display area will display set cool down temperature
- Cook time display area will display current cool down temperature

Fahrenheit or Celsius Function - choose temperature format:

- Unit is not in a cooking or cleaning process
- Press "Set Cooking Temperature", "Decrease Value" and "Increase Value" buttons simultaneously for 1 second
- Cooking temperature display area will display last value "C" or "F"; Display will alternate between "C" and "F" every 2 seconds
- Press "Start/Stop" key when the display is showing the desired value ("C" or "F")

SIMPLE CONTROL OPERATING INSTRUCTIONS

Turn on and preheat the oven

Alto-Shaam recommends preheating the Combitherm® before cooking.

- Press the **Power** key.
- Choose a **Mode**.

- Press **Oven Temperature** key.
- Adjust temperature with arrow keys.
- Press **Cook Time** key.
- Adjust time with arrow keys.
- Press the **Start/Stop** key.
- Preheat oven before loading food.

To cook manually by probe

- Choose a **Mode**.

- Press the **Oven Temperature** key; adjust temperature with arrow keys.
- Press the **Probe Temperature** key; adjust temperature using the arrow keys.
- Load food into oven and insert probe into food.
- Press the **Start/Stop** key.

To cook manually by time

- Choose a **Mode**.

- Press the **Oven Temperature** key; adjust temperature with arrow keys.
- Press the **Cook Time** key; adjust temperature using the arrow keys.
- Load food into oven.
- Press the **Start/Stop** key.

CLEANING & MAINTENANCE

COMBICLEAN CLEANING AGENTS

⚠ DANGER

RUBBER GLOVES MUST BE WORN WHEN USING COMBICLEAN TABLETS OR SPRAY OVEN CLEANER.

⚠ DANGER

PROTECTIVE EYE WEAR MUST BE WORN WHEN USING SPRAY OVEN CLEANER.

NOTE: **Use authorized Combitherm cleaner only.**

Unauthorized cleaning agents may discolor or harm interior surfaces of the oven. Read and understand label and material safety data sheet before using the oven cleaner.

CAUTION: **Causes eye, skin, and respiratory tract irritation. keep out of reach of children.**

PRECAUTIONS:

- Do not take internally.
- Avoid contact with eyes and skin.
- Use rubber gloves when using this product.
- Wash hands thoroughly after handling.
- Avoid mixing with strong, concentrated acids.

FIRST AID:

Skin: Flush with water. Remove contaminated clothing and do not re-wear until washed. If irritation persists see a physician.

Eyes: Flush with water for 15 minutes. See a physician immediately.

Inhalation: If difficulty in breathing occurs, leave area immediately and do not return until dust is settled. If irritation persists, see a physician.

Ingestion: Drink large quantities of milk or water. DO NOT INDUCE VOMITING. See a physician immediately.

PROTECTIVE PACKAGING OF TABLETS WILL BEGIN TO DISSOLVE ONTO SKIN IF HANDLED WITH DAMP OR WET HANDS.

CLEANING & MAINTENANCE

PREVENTATIVE MAINTENANCE

In addition to the routine cleaning and maintenance procedures, there are several additional steps to be taken for both sanitation and to keep the oven running efficiently. These additional safeguards will help prevent down time and costly repairs.

DO NOT DISPOSE OF GREASE, FAT, OR SOLID WASTE DOWN THE OVEN DRAIN.
Fats and solids will eventually coagulate in the drain system, causing blockage. Consequently, water will back-up into the condenser and interior oven compartment, resulting in an oven that is inoperable.

MAKE CERTAIN THE DRAIN SCREEN IS ALWAYS IN PLACE. REMOVE ANY SOLID WASTE MATERIAL FROM THE DRAIN SCREEN BEFORE IT ENTERS THE DRAIN SYSTEM.
The routine removal of solids from the drain screen will help prevent blockage.

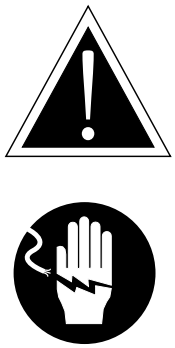
USE THE AUTHORIZED COMBITHERM OVEN CLEANER ONLY.
The use of unauthorized cleaning agents may discolor or harm the interior surfaces of the oven.

TO PROLONG THE LIFE OF THE DOOR GASKET, CLEAN THIS ITEM DAILY.
The acids and related compounds found in fat, particularly chicken fat, will weaken the composition of the gasket unless cleaned on a daily basis. Wipe with a hot, soapy cloth.

TO ADDITIONALLY PROTECT GASKET LIFE, ALLOW OVEN DOOR TO REMAIN SLIGHTLY OPEN AT THE END OF THE PRODUCTION DAY.
An open door will relieve the pressure on the door gasket.

ROUTINELY CLEAN DOOR HINGES.
Open oven door to relieve tension. Clean all parts of the hinge.

DANGER



AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.

SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.

WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

CLEANING & MAINTENANCE

CLEANING AND PREVENTATIVE MAINTENANCE

PROTECTING STAINLESS STEEL SURFACES

It is important to guard against corrosion in the care of stainless steel surfaces. Harsh, corrosive, or inappropriate chemicals can completely destroy the protective surface layer of stainless steel. Abrasive pads, steel wool, or metal implements will abrade surfaces causing damage to this protective coating and will eventually result in areas of corrosion. Even water, particularly hard water that contains high to moderate concentrations of chloride, will cause oxidation and pitting that result in rust and corrosion. In addition, many acidic foods spilled and left to remain on metal surfaces are contributing factors that will corrode surfaces.

Proper cleaning agents, materials, and methods are vital to maintaining the appearance and life of this appliance. Spilled foods should be removed and the area wiped as soon as possible but at the very least, a minimum of once a day. Always thoroughly rinse surfaces after using a cleaning agent and wipe standing water as quickly

CLEANING AGENTS

Use non-abrasive cleaning products designed for use on stainless steel surfaces. Cleaning agents must be chloride-free compounds and must not contain quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel surfaces. Always use the proper cleaning agent at the manufacturer's recommended strength. Contact your local cleaning supplier for product recommendations.

CLEANING MATERIALS

The cleaning function can usually be accomplished with the proper cleaning agent and a soft, clean cloth. When more aggressive methods must be employed, use a non-abrasive scouring pad on difficult areas and make certain to scrub with the visible grain of surface metal to avoid surface scratches. Never use wire brushes, metal scouring pads, or scrapers to remove food residue.

⚠ CAUTION

TO PROTECT STAINLESS STEEL SURFACES, COMPLETELY AVOID THE USE OF ABRASIVE CLEANING COMPOUNDS, CHLORIDE BASED CLEANERS, OR CLEANERS CONTAINING QUATERNARY SALTS. NEVER USE HYDROCHLORIC ACID (MURIATIC ACID) ON STAINLESS STEEL. NEVER USE WIRE BRUSHES, METAL SCOURING PADS OR SCRAPERS.

CLEANING & MAINTENANCE

CLEANING SCHEDULE

DAILY GASKET CLEANING

It is important to prolong the life of the oven gasket by cleaning on a daily basis. Routine cleaning will help protect the gasket from deterioration caused by acidic foods.

1. Allow the oven to cool, then wipe the gasket and crevices with clean cloth soaked in warm detergent solution.
2. Wipe the gasket and crevices with a cloth and clean rinse water.

Do not attempt to remove gasket or place in the dishwasher.

PROBE USAGE AND CLEANING

After each use of the **CORE TEMP** mode, wipe the probe tip with a clean paper towel to remove food debris. Follow by wiping the probe with a disposable alcohol pad. Return the probe to the proper door bracket position.

Probe Cleaning Procedures

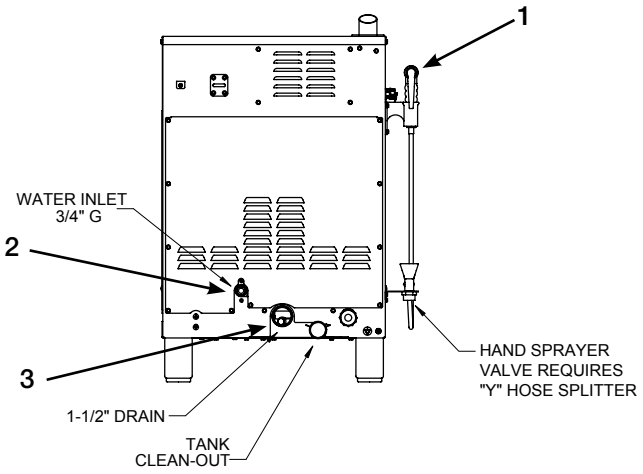
1. Remove all food debris from probe between loads and at the end of each production shift. Wipe the entire probe, probe cable assembly, and probe holding bracket with a clean cloth and warm detergent solution.
2. Remove detergent by wiping the probe, cable, and bracket with a cloth and clean rinse water.
3. Wipe probe and probe bracket with disposable alcohol pad or sanitizing solution recommended for food contact surfaces.
4. Allow probe and cable to air dry in the probe holding bracket.
5. Wipe the probe with a disposable alcohol pad prior to inserting into a new food product.

DAILY OVEN CLEANING

To be performed at the end of the production day or between production shifts.

MONTHLY CLEANING

1. Spray Head
2. Water Intake Filters
3. Drain Pipe



DANGER

AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.

SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.

WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

EXPRESSTOUCH WITH COMBICLEAN OPTION

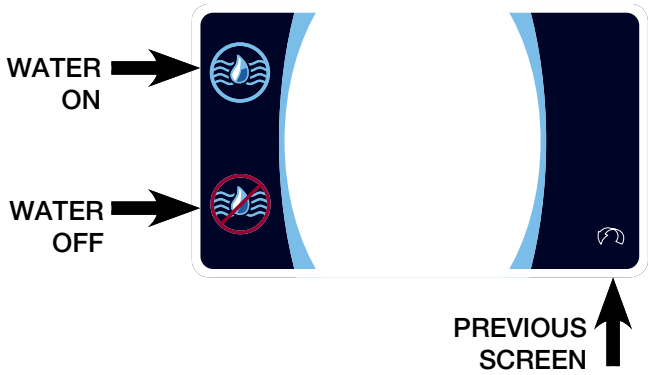
Four (4) cleaning levels are offered: rinse, light, normal, and heavy-duty cleaning. CombiClean® tablets or Combitherm liquid spray cleaner may be used. Side racks and shelves may remain inside oven during cleaning. Remove solid wastes from the bottom of the oven and the drain screen to prevent blockage.

Note: *If a power outage were to occur during any of the cleaning cycles, the oven will begin a six (6) minute forced-rinse cycle.*

SELECT CLEANING MODE FROM ANY SCREEN.

NOTE: If oven is too hot to safely clean, an oven with red interior will appear on the screen and the cool down function is automatically activated. Allow oven to cool to 200°F (93°C) before cleaning.

CLEANING MODE MENU



PRESS WATER ON ICON TO CONFIRM THAT WATER SUPPLY IS TURNED ON.

OVEN TOO HOT WARNING

Must allow oven to cool down before inserting CombiClean tabs or spraying with cleaner

SELECT DESIRED LEVEL OF CLEANING.

RINSE (20 MINUTES)

LIGHT (30 MINUTES)

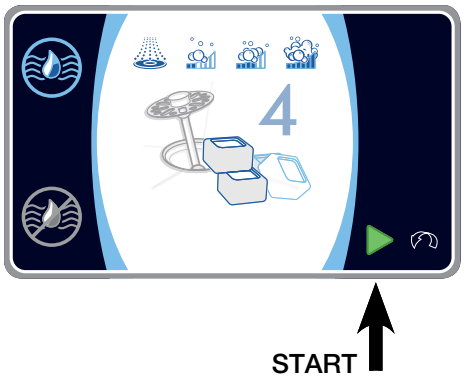
NORMAL (1 HOUR 21 MINUTES)

HEAVY-DUTY (2 HOURS 6 MINUTES)

INSERT APPROPRIATE NUMBER OF COMBICLEAN TABLETS as directed by touchscreen or spray interior of oven with combitherm liquid spray cleaner. User may add one additional tablet in either normal or heavy duty modes for particularly dirty ovens.

COMBI CLEANER REQUIREMENT

The number of required CombiClean tabs is shown.



PRESS THE GREEN START ARROW ICON TO BEGIN CLEANING.
Oven beeps when cleaning is finished.
Leave door slightly ajar.

CLEANING IN PROCESS

SIMPLE CONTROL WITH COMBICLEAN OPTION

One (1) heavy-duty cleaning cycle (2 hours 5 minutes) is offered. CombiClean® tablets or Combitherm liquid spray cleaner may be used. Side racks and shelves may remain inside oven during cleaning. Remove solid wastes from the bottom of the oven and the drain screen to prevent blockage.

Note: *If a power outage were to occur during any portion of the cleaning cycle, the oven will begin a six (6) minute forced-rinse cycle. Cook temperature display area will display "RIN". Cook time display area will display "-.--"*

SELECT CLEANING MODE.

NOTE: If oven is too hot to safely clean, "door" will appear on the screen and the cool down function is automatically activated. Open the oven door to allow oven to cool to 200°F (93°C) before cleaning.

Cooking temperature display area will display "CLn". Cooking time display area will display "6" - referring to the number of cleaning tablets to insert.

Lift interior oven drain screen and insert six (6) COMBICLEAN TABLETS or spray interior of oven with Combitherm liquid spray cleaner. User may add one additional tablet for particularly dirty ovens.

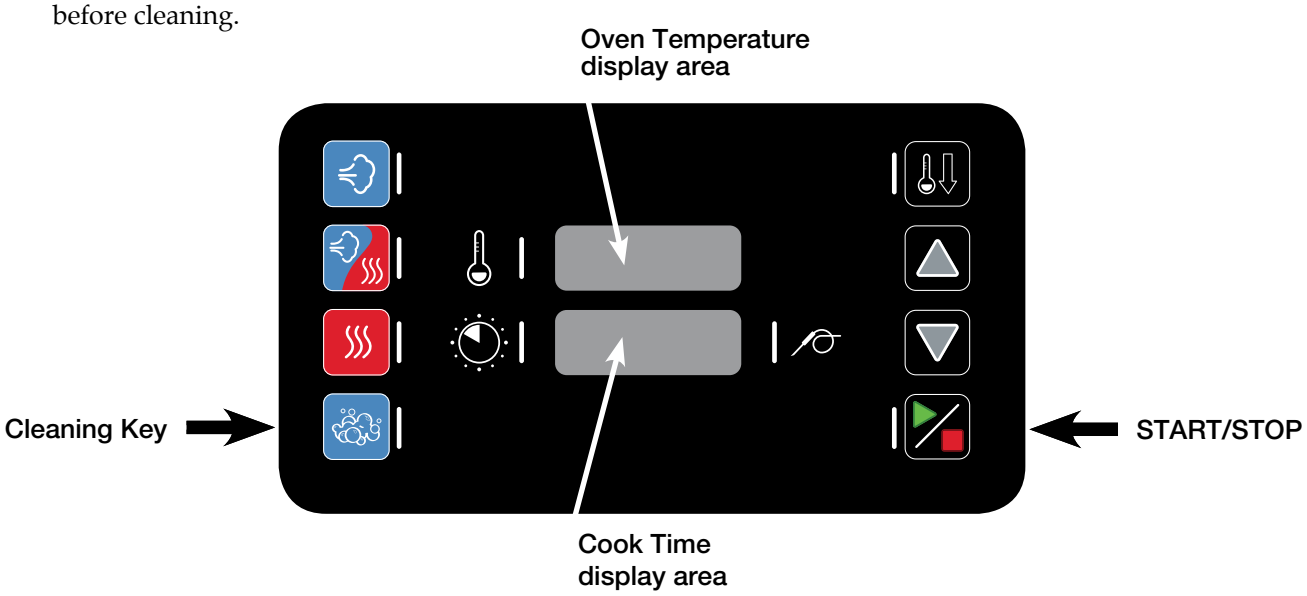
Close oven door.

Press key until the LED lights to begin cleaning cycle.

Cooking temperature display area will display "CLn".

Cooking time display area will display time remaining.

Oven beeps when cleaning is finished. Leave door slightly ajar.



CLEANING & MAINTENANCE

CLEANING - **WITHOUT** COMBICLEAN PROGRAM

The CT Express Combitherm can be ordered without the CombiClean® option. CombiClean® tablets or Combitherm liquid spray cleaner may be used.

NOTE: If oven is too hot to safely clean, press the cool down function key to activate.

Open the oven door to allow oven to cool to 200°F (93°C) before cleaning.

Side racks and shelves may remain inside oven during cleaning. Remove solid wastes from the bottom of the oven and the drain screen to prevent blockage. Unfasten the Fan Guard Cover Plate in the back of the oven and swing open.

- Wearing safety glasses and rubber gloves, generously spray the interior oven surfaces with an even coating of Combitherm Liquid Oven Cleaner. Spray all built in components, shelves, and side racks. Spray the back of the Fan Guard Cover Plate, the oven fan, and the both sides of the oven.
- Securely close the oven door and let the solution stand for a minimum of 10 minutes.
- Press Power on.
- Press Steam.
- Set Time for ten minutes.
- Oven beeps for 3 minutes at the end of the steam cycle or until the door is opened or until a cook mode button is pressed.
- Open door.
- Make certain to thorughly rinse all surfaces to remove any cleaning solution residue. Use a non-abrasive cleaning pad for any problem areas.
- Swing the Fan Guard Cover Plate back into position and fasten into place.
- Replace the side racks and shelves.
- Wipe door gasket with a hot, soapy cloth.
  Wipe again with a clean rinse cloth.
- Leave door slightly ajar to air dry.

DANGER

AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.

SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.

WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

TROUBLESHOOTING

EMERGENCY OPERATION MODE

If the oven malfunctions, an error code will appear in the display. In the event of an error, the Combitherm may be operated on a limited basis. Error conditions under which continued operation is possible are indicated by "Yes" in the chart on the next page. To operate the oven in the event of an error code:

PRESS THE START ICON TO ACKNOWLEDGE THE ERROR.

The icons that begin to flash represent operational modes that are still usable.

SELECT ONE OF THE AVAILABLE COOKING MODES.

SET THE OVEN CONTROLS AS IF OPERATING UNDER NORMAL CIRCUMSTANCES.

Depending on the error code involved, oven function, such as temperature range, may be limited.

PRESS THE START ICON TO BEGIN COOKING.

PRESS THE STOP ICON WHEN TIMER EXPIRES.

The Combitherm will return to normal operation when the oven fault is corrected.

TROUBLESHOOTING

EMERGENCY OPERATION MODE (CONTINUED)

ERROR CODES

When the oven malfunctions, an error code will appear in the display.

PRESS THE START ICON TO ACKNOWLEDGE THE ERROR.

The icons that begin to flash represent operational modes that are still usable.
When the oven fault is corrected, the Combitherm will return to normal operation.

Error Code	Display Shows	Model		Mode			
		ES	ESG ESI	Steam	Combination	Convection	Retherm
E01	Low Water Boiler	Yes	No	No	No	To 365°F/185°C	No
E02	Control Temp High	Yes	Yes	No	No	No	No
E03	Fan Motor Error	Yes	Yes	No	No	No	No
E04	Fan Motor 2 Error	Yes	Yes	No	No	No	No
E11	Convection Temperature High	Yes	Yes	BOILER UNITS ONLY	No	No	No
E13	Boiler Temperature High	Yes	No	No	No	Yes	No
E15	Condenser Temperature High	Yes	Yes	No	No	To 356°F/180°C	No
E20	B11 Core Temperature Probe Single Point Fault - HACCP only	Yes	Yes	No	No	No	No
E21	N6 Cavity Probe Fault	Yes	Yes	BOILER UNITS ONLY	No	No	No
E22	B10 Core Temp Probe Fault	Yes	Yes	BY TIME ONLY	BY TIME ONLY	BY TIME ONLY	BY TIME ONLY
E23	B4 Boiler Probe Fault	Yes	No	No	No	No	No
E24	B5 Bypass Probe Fault	Yes	Yes	No	No	Yes	No
E25	B3 Condenser Probe Fault	Yes	Yes	Yes	No	To 356°F/180°C	No
E26	N8 Boiler Safety Temperature Probe Fault	Yes	No	No	No	No	No
E27	Boiler Element Temperature High	Yes	No	No	No	Yes	No
E34	Steam Generator Drain Pump Fault	Yes	No	No	No	No	No
E36	Steam Temperature High	Yes	No	No	No	Yes	No
E51	No Water in Boiler	Yes	No	No	No	Yes	No
E53	Fan Motor High Temperature	Yes	Yes	No	No	No	No
E54	Fan Motor 2 High Temperature	Yes	Yes	No	No	No	No
E55	Vent Not Open	Yes	Yes	Yes (NO BROWNING)	Yes (NO BROWNING)	Yes (NO BROWNING)	Yes (NO BROWNING)
E57	No Rinse Water	Yes	Yes	Yes	Yes	Yes	Yes
E93	Communication Error FROM Display Board	Yes	Yes	No	No	No	No
E94	Communication Error TO Display Board	Yes	Yes	No	No	No	No

TROUBLESHOOTING

ERROR CODES

This section is provided for the assistance of qualified technicians only and is not intended for use by untrained or unauthorized service personnel. If your Alto-Shaam® unit is not operating properly, check the following before calling your Authorized Alto-Shaam Service Agent:

☛ Check that unit is receiving power. Circuit breaker turned on?

Do not attempt to repair or service the oven beyond this point. Contact Alto-Shaam for the nearest authorized service agent. Repairs made by any other service agents without prior authorization by Alto-Shaam will void the warranty on the unit.

When the oven malfunctions, an error code will appear in the display.

PRESS THE START ICON TO ACKNOWLEDGE THE ERROR.

The icons that begin to flash represent operational modes that are still usable.
When the oven fault is corrected, the Combitherm will return to normal operation.

Error Code	Error Call Out in Display	Description of Error	Possible Cause
E01	Low Water Boiler	Low water level in boiler	— Water supply is shut off. — Low water pressure. — Generator drain cap missing or loose. — Generator drain pump is not sealing. — Generator drain pump elbow leaking. — Faulty or scaled water level probe. — Faulty or plugged dual solenoid valve assembly. — Wiring or connection issue. — No output to dual solenoid from relay board. — Relay board, high voltage is not operating.
E02	Control Temperature High	Relay board surface temperature too high	— Wiring or connection issue. — Cooling fan on Relay board assembly is not operating. — Cooling Fan on display board is not operating. — Main Cooling fan is not operating. — Cooling Fan on motor drive is not operating. — Unit is less than 20” from a heat producing source on its left hand side.
E03	Fan Motor Error	Fan motor does not work	— Exhaust hood is not operating properly. — Check LED flashes on the Motor Control. — **See Motor Control Error Code list**. — Connection Issue on Hall Effect sensor. — Fan whel is not operating. — Hall sensor does not detect motor rotation.
E04	Fan Motor 2 Error	Lower fan motor on 20•20 does not work	— Exhaust hood is not operating properly. — Check LED flashes on the Motor Control. — **See Motor Control Error Code list**. — Connection Issue on Hall Effect sensor. — Fan wheel is not operating. — Hall sensor does not detect motor rotation.
E11	Convection Temperature High	Excess oven temperature	Convection Mode & Combi Mode: — Convection Oven contactor(s) stuck closed. — N6 Oven Cavity Temperature probe defective. — N6 Cavity Probe connection problem. — Relay board, high voltage is not operating. — Wiring or connection issue. Combi Mode Only: — Insufficient water supply into oven for steam production.

(CONTINUED ON NEXT PAGE)

TROUBLESHOOTING

ERROR CODES

Error Code	Error Call Out in Display	Description of Error	Possible Cause
E13	Boiler Temperature High	Boiler temperature overheats	— Scale build up inside steam generator. — Scale build up on water level probe. — B4 Probe connection problem. — B4 probe faulty.
E15	Condensor Temperature High	Excess condensor temperature	— Untreated water supply line is shut off. — Untreated water supply line is connected to warm water. — B3 probe connection problem. — B3 probe is faulty. — Single solenoid valve Y2 obstructed or faulty. — Wiring or connection problem. — Relay board, high voltage is not operating.
E20	HACCP Only - B11 Core Temperature Probe Single Point Fault Error E20 is not shown in display. Instead a probe sign with "?" is shown as popup window. In case the customer cooks in time mode during first step and during second step switches to probe mode but has no probe in place, the error E20 will be shown in the error code list and HACCP list.	Single point core temperature probe defect or disconnected.	— Clean Probe Receptacle Pins with sand paper. — B11 Single Point Core Temperature probe with quick connect, defective. — B11 Single Point Core Temperature probe wires with quick connect, disconnected. — B11 Single Point Core Temperature probe receptacle, defective. — B11 Single Point Core Temperature probe receptacle wires disconnected.
E21	N6 Cavity Probe Fault	Cavity temperature probe defect or disconnected	— N6 Oven Cavity Temperature probe defective. — N6 Oven Cavity Temperature connection problem.
E22	B10 Core Temperature Probe Multipoint Fault	Multipoint core temperature probe defect or disconnected	— B10 Multipoint Core Temperature probe defective. — B10 Multipoint Core Temperature probe connection problem.
E23	B4 Boiler Probe Fault	Boiler temperature probe defect or disconnected	— B4 Boiler temperature probe defective. — B4 probe wires connection problem.
E24	B5 Bypass Probe Fault	Bypass steam temperature probe defect or disconnected	— B5 Bypass steam temperature probe defective. — B5 Bypass steam temperature connection problem.
E25	B3 Condensor Probe Fault	Condensor water temperature probe defect or disconnected	— B3 Condensor temperature probe defective. — B3 Condensor probe connection problem.
E26	N8 Boiler Safety Temperature Probe Fault	Steam generator heating element protection probe defect or disconnected	— N8 Boiler temperature probe defective. — N8 probe connection problem.
E27	Boiler Element Temperature High	Excess steam generator safety probe	— Scale build up inside steam generator. — Scale build up on water level probe. — Water level probe connection failure. — N8 boiler temperature probe defective. — N8 probe connection problem. — Steam element contactor(s) stuck closed. — Wiring or connection problem.

(CONTINUED ON NEXT PAGE)

TROUBLESHOOTING

ERROR CODES

Error Code	Error Call Out in Display	Description of Error	Possible Cause
E34	Steam Generator Drain Pump Fault	Water level in steam generator does not drop during cleaning program	— Scale build up inside the steam generator drain pump. — Scale build up inside the steam generator affecting water level probes. — Generator drain pump is faulty. — Connection issue at drain pump. — No output to pump from relay board.
E36	Steam Temperature High	Oven cavity temperature is too high when operating in a steam mode or cleaning program	— Water supply is shut off. — Low water pressure. — Wiring or connection issue. — Water injection pipe obstructed. — Water flow control valve plugged or defective. — Dual solenoid valve Y-1 obstructed or defective. — No output to solenoid valve form relay board.
E51	No Water In Boiler	Water inside steam generator does not reach low water level	— Water supply is shut off. — Low water pressure. — Generator drain cap missing or loose. — Generator drain pump is not sealing. — Generator drain pump elbow leaking. — Faulty or scaled water level probe. — Faulty or plugged dual solenoid valve assembly. — Wiring or connection issue. — No output to dual solenoid from relay board.
E53	Fan Motor High Temperature	Fan motor too hot	— Exhaust hood is not operating properly. — Check LED flashes on the Motor Control. — **See Motor Control Error Code list**. — Connection Issue on Hall Effect sensor. — Fan wheel is not operating. — Hall sensor does not detect motor rotation.
E54	Fan Motor 2 High Temperature	20•20 lower fan motor too hot	— Exhaust hood is not operating properly. — Check LED flashes on the Motor Control. — **See Motor Control Error Code list**. — Connection Issue on Hall Effect sensor. — Fan wheel is not operating. — Hall sensor does not detect motor rotation.
E55	Vent Not Open	Browning valve does not open	— Alignment issue between motor cam and vent motor safety switch (micro switch). — Fault vent valve (motor). — Fault vent valve safety switch (micro switch). — Wiring or connection problem.

(CONTINUED ON NEXT PAGE)

TROUBLESHOOTING

ERROR CODES

Error Code	Error Call Out in Display	Description of Error	Possible Cause
E57	No Rinse Water	During rinse no water flow is detected through solenoid valve	— Water supply is shut off. — Low water pressure. — Check wiring to all components mentioned below. — Flow switch is dirty or defective. — Dual water solenoid valve obstructed or faulty (Y3.) — Relay board, high voltage, defective.
E93	Communication Error, FROM Display Board	Communication error between display board and low voltage relay board	— Check ribbon cable connections mentioned below. — Ribbon cable defective. — Relay board, low voltage, connector defective. — Display board connector defective.
E94	Communication Error, TO Display Board	Communication error between display board and low voltage relay board	— Check ribbon cable connections mentioned below. — Ribbon cable defective. — Relay board, low voltage, connector defective. — Display board connector defective.
E98	RB is in Cesius and DB is in Fahrenheit	Conflict of unit configuration in the setup menu	— Relay board and Data board do not match, use setup menu to change format.
E99	RB is in Fahrenheit and DB is in Cesius	Conflict of unit configuration in the setup menu	— Relay board and Data board do not match, use setup menu to change format.
E100	DB is not equal to RB version. Error generated by DB.	Software update may have failed.	— Check ribbon cable connections. — Ribbon cable defective. — Relay board, low voltage, connector defective. — Display board connector defective. — Software may need to be updated again.
E101	DB is not equal to RB version. Error generated by RB.	Software update may have failed.	— Check ribbon cable connections. — Ribbon cable defective. — Relay board, low voltage, connector defective. — Display board connector defective. — Software may need to be updated again.